

Review of *Chaetomyrmar* Ogloblin, with Description of a New Species in the Hawaiian Islands (Hymenoptera: Mymaridae)

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Abstract.—The Old World genus *Chaetomyrmar* Ogloblin, with 11 nominal species, is reviewed and a key to 10 species is presented. *Polynema dei* Girault is transferred to *Chaetomyrmar* as *C. dei* (Girault), **comb. nov.** *Chaetomyrmar indopeninsularis* (Mani and Saraswat), **stat. rev.**, is removed from synonymy under *C. bagicha* (Narayanan, Subba Rao and Kaur). *Chaetomyrmar sophoniae*, **sp. nov.**, is described from eggs of the two-spotted leafhopper, *Sophonia rufofascia* (Kuoh and Kuoh), in the Hawaiian Islands. It most likely originated from the Oriental region, possibly southern China. *Acanthomyrmar* is synonymized under *Polynema* and its type species transferred as *P. nigrum* (Subba Rao), **comb. nov.**

In 1987, the two-spotted leafhopper, *Sophonia rufofascia* (Kuoh and Kuoh) (Cicadellidae), was found in the Hawaiian Islands and is now widespread on the larger islands in the chain (Jones et al. 2000, Yang et al. 2000). Shortly thereafter, a mymarid was reared from its eggs (Johnson et al. 2001). It represents a new species of *Chaetomyrmar* Ogloblin, misidentified initially as *C. bagicha* (Narayanan, Subba Rao, and Kaur) by Beardsley and Huber (2000). The mymarid was presumably introduced accidentally into Hawaii together with its host, almost certainly from the Oriental region. More recently, *S. rufofascia* was found in California (Garrison 1996) and Tahiti (Polhemus 2001). Because the mymarid is the most important egg parasitoid of *S. rufofascia* in Hawaii and may eventually be introduced intentionally into other areas as a biological control agent, it is described here. To place the new species into context, the described species of *Chaetomyrmar* are keyed and notes on some of them given. Because previous authors have suggested that *Acanthomyrmar* Subba Rao may be a synonym of *Chaetomyrmar* it is also discussed and its

type species, *A. nigrum* Subba Rao, is re-described as *Polynema nigrum* (Subba Rao), **comb. nov.**

METHODS

About 220 point or card-mounted specimens and 45 slide-mounted specimens were examined from the Natural History Museum, London (BMNH), Bernice P. Bishop Museum (BPBM), University of California, Berkeley (CISC), Canadian National Collection (CNCI), University of Hawaii at Manoa (CTAM), Biological Control Research Institute, Fujian Agricultural and Forestry University, Fuzhou (FAFU), Indian Agricultural Research Institute, New Delhi (IARI), Museo de la Plata, La Plata (MLPA), Plant Protection Research Institute, Pretoria (PPRI), Queensland Museum (QMBA), University of California, Riverside (UCRC), and National Museum of Natural History, Washington, DC (USNM). Colour and body length of both sexes were described from critical point dried and card- or point-mounted specimens. Other features were described from slide mounted material. The scanning electron micrographs were cleaned and compiled into plates using

Adobe Photoshop. All measurements are in micrometers and include the mean, usually followed in parentheses by the range, sample standard deviation, and number of specimens measured. Primary type measurements are tabulated separately and are not included in the species descriptions. Abbreviations are: F = funicle segment in females or flagellomere in males; FW = forewing, HW = hind wing, LMS = longest marginal setae, Gt = gastral tergum, POL = distance between posterior ocelli. Key features are based on specimens examined except for *C. tayalum* and *C. gracile*. Key features for these are taken from the original descriptions.

Chaetomyrmar Ogloblin

Chaetomyrmar Ogloblin, 1946: 277 (original description); Ogloblin, 1952: 137 (placement of *Chaetomyrmar* in Bruchomyrmarini); Annecke and Douth 1961: 34 (diagnosis); Subba Rao, 1970: 668 (comparison with *Acanthomyrmar*); Schauff, 1984: 57 (diagnosis, relationships); Hayat, 1992: 85 (comparison with *Acanthomyrmar* and *Himopolyntema*); Hayat and Anis 1999a: 18 (comparison with *Himopolyntema*); Triapitsyn and Berezovskiy 2002: 2 (distribution).

Type species.—*Chaetomyrmar kusnezovi* Ogloblin, by original designation.

Diagnosis.—Body of female mostly yellow, clava dark brown; body of male light brown. Face with toruli separated from vertex by at least one torular diameter and subantennal grooves absent. Vertex with numerous short, strong, blunt setae. Female clava brown, contrasting with yellowish funicle, and with 7 longitudinal sensilla. Female funicle at most with only 1 longitudinal sensillum, on F6. Scape smooth on medial and lateral surfaces. Pronotum with several pairs of long, strong setae and spiracle on a short stalk. Propleura broadly abutting anteriorly, the prosternum thus "closed" anteriorly. Axilla each with long, strong, blunt seta extending at least to level of posterior margin of scutellum. Metanotum usually hid-

den medially under posterior margin of scutellum. Scutellum with placoid sensilla in posterior half and much closer to lateral margin than to each other, and usually with a minute seta near lateral margin just outside each placoid sensillum. Propodeum with 1–3 pairs of setae and sometimes a short median carina extending from short nucha up to half the distance to dorsellum. Forewing with posterior margin distinctly sinuate behind marginal vein and just beyond. Marginal vein linear, with anterior and posterior margins parallel, and both proximal and distal macrochaetae present. Stigmal vein with basal placoid sensillum next to apical group of 4 sensilla, thus forming a curved line of 5 sensilla. Petiole joined to gastral tergum.

Ogloblin (1946), Annecke and Douth (1961), Schauff (1984), and Hayat and Anis (1999b) discussed features of *Chaetomyrmar* that appeared to define the genus. These and other apparently distinctive features are summarized above. However, as with most myrmarids, any one feature may also occur in other, sometimes unrelated, genera so most or all the features should be present before assigning a specimen to *Chaetomyrmar*. The two most readily visible features of *Chaetomyrmar*, namely, the yellow body colour in females and the long axillar setae, also occur in other genera, e.g., the New World genus *Neomyrmar* Crawford, so these features alone are inadequate to define *Chaetomyrmar*. However, the axillar setae in *Chaetomyrmar* usually extend the length of the scutellum, often much more, whereas in other genera they are usually shorter than the scutellum length.

Distribution.—*Chaetomyrmar*, as defined here, is an Old World genus with 11 nominal species from the eastern Palearctic (west to Arabian peninsula), Afrotropical, Oriental, and Australian regions. Yoshimoto (1990) incorrectly included *Chaetomyrmar* in his New World list. Specimens under this name in the CNCI were found to belong to other genera and I have not

found any other western hemisphere specimens that could be identified as *Chaetomymar*, as defined here.

Hosts.—Cicadellidae: *Penthimiola bella* (Stål)—*C. gracile* Prinsloo and *C. lepidum* Annecke and Doutt (Prinsloo 1986); *Sophonia rufofascia*, *S. pallida* (Melichar) and *S. furcilinea* (Kuoh and Kuoh)—*C. sophoniae* sp. n.; *Hishimonus sellatus* (Uhler)—*C. hishimoni* Taguchi (Taguchi 1975). Lymantriidae: *Euproctis flexuosa* Snellen—*C. elisabethae* (Ferrière) (Ferrière 1931). Lyonetiidae: *Leucoptera* sp. (coffee leaf miner)—*C. lepidum* (Subba Rao 1970). Hosts have been reported for almost half the described species, which is surprising for a genus with few, uncommonly collected individuals. The records from Cicadellidae are considered reliable whereas those from Lepidoptera, if correct, are exceptional because Mymaridae normally do not parasitize members of this order.

Discussion.—*Chaetomymar* belongs to a group of genera that Ogloblin (1952) placed in Bruchomymarini and Annecke and Doutt (1961) placed in Mymarini. Ogloblin (1952) had classified *Chaetomymar* in Bruchomymarini on the basis of 2 pairs of propodeal setae. His tribal classification was based on few characters that are not sufficiently reliable to group the genera meaningfully. Thus, species with only one pair of propodeal setae, e.g., *C. hishimoni*, *C. tayalum* Taguchi (Taguchi 1975), and *C. bagicha* (Hayat 1992), would key to Ogloblin's Polynematini, whereas those with at least two pairs, e.g., *C. elisabethae*, *C. kusnezovi*, and *C. gracile*, would key to Ogloblin's Bruchomymarini.

Schauff (1984) narrowed down the relationships of *Chaetomymar* to five genera—*Stephanodes* Enock, *Polynema* Haliday, *Acmopolynema* Ogloblin, *Mymar* Curtis, and *Neomymar*, based on his study of Holarctic genera. Hayat (1992) and Hayat and Anis (1999b) referred to these (but not *Neomymar*, which does not occur in India, the area they treated), *Narayanella* Subba Rao and *Himopolynema* Taguchi as the *Polynema*

group, following Soyka's (1956) designation (for the 11 nominal genera that Soyka considered as related to *Polynema*). Here, I further reduce the number of genera in the *Polynema* group by excluding *Stephanodes*, which differs by several features including absence of the proximal macrochaeta on the marginal vein (Huber and Fidalgo 1998), and *Mymar* and *Neomymar*, which have the toruli abutting against the transverse trabecula or almost so. The genera in the Old World closest to *Chaetomymar* are probably *Polynema*, *Himopolynema*, *Acanthomymar*, and perhaps *Acmopolynema*. None of these are particularly well defined at present. The gap between them is small compared to many other mymarid genera, and species such as *Acmopolynema unimaculatum* Hayat and Anis, only tentatively assigned to *Acmopolynema* (Hayat and Anis 1999b), seem to bridge the gap with a mosaic of features that occur in one or more of the other genera.

Subba Rao (1970) contrasted his genus *Acanthomymar* specifically with *Chaetomymar*. New (1976) pointed out the resemblance of *Acanthomymar* to some Australian *Polynema*. *Acanthomymar nigrum* Subba Rao, the only species in the genus, differs from *Chaetomymar* species as follows. Propodeum without trace of median carina above base of petiole (but some *Chaetomymar* also lack the carina). Scutellum with placoid sensilla in anterior half and closer to each other than to lateral margin. Stigmal vein with basal placoid sensillum separated from apical group of 4 sensilla and located just basal to distal macrochaeta. Clava same colour as funicle, with 9 or 10 longitudinal sensilla. Funicle without sensory ridges on F6. Body and appendages dark brown. *Acanthomymar* otherwise has most of the features of *Chaetomymar*, particularly the long, blunt setae on the thorax. Hayat (1992) suggested that *Acanthomymar* might prove to be a synonym of *Chaetomymar*. Hayat and Anis (1999b) suggested that the only feature of possible ge-

neric value separating *Acanthomyrmar* from *Chaetomyrmar* was the position of the placoid sensilla on the anterior half of the scutellum in *Acanthomyrmar* instead of the posterior half, as in *Chaetomyrmar*. *Acanthomyrmar* also has most of the features of some species placed in *Polynema* (as *Maidliella*) by Debauche (1949), particularly the anterior position of the scutellar placoid sensilla and the dark brown or black body colour. Unfortunately, Debauche did not describe mesosomal setation for any of the 13 Afrotropical species he treated, other than to say that the thorax except the pronotum is glabrous and the propodeum is smooth. Because the mesoscutal and axillar setae are sometimes almost transparent Debauche may have failed to notice them. He did, however, mention the placoid sensilla. These vary in position from well in front of the middle to near the posterior margin of the scutellum. In addition, two of the Afrotropical *Polynema* species have the basal placoid sensillum of the stigmal vein separated from the apical group, as in *A. nigrum*. At least two others have short, blunt, nail-like setae on the anterior margin of the forewing base and behind the marginal vein, also as in *C. nigrum*.

What should be done with *Acanthomyrmar*? Four possibilities could be argued for almost equally. Either *Acanthomyrmar*

could be synonymized under *Polynema*. Or some African *Polynema* could be transferred to *Acanthomyrmar*, which should be kept as a valid genus. Or *Acanthomyrmar* could be synonymized under *Chaetomyrmar* and some *Polynema* should also be transferred to *Chaetomyrmar*. Or *Acanthomyrmar* and *Chaetomyrmar* could both be synonymized under *Polynema*, and treated perhaps as subgenera or species groups. It seems best at present to synonymize *Acanthomyrmar* as syn. nov. under *Polynema* and transfer its only species to *Polynema* as *Polynema nigrum* (Subba Rao), comb. nov. The merit of this choice is that *Chaetomyrmar*, as defined here, will then include only species whose females have mainly yellow bodies and contrasting dark antennal clava. Females, at least, are then all fairly easily distinguished from *Polynema* species (including *Acanthomyrmar*) on colour alone.

The species of *Chaetomyrmar* fall into two groups; those with brown-banded wings and those with clear wings. Within each the species are difficult to distinguish. In addition to presence and shape of wing bands, the number and position of the propodeal setae, and proportions of the scutellum are useful species characters. More material of most species is needed to determine the reliability of these characters.

KEY TO DESCRIBED *CHAETOMYRMAR* SPECIES

- | | | |
|------|--|---|
| 1 | Forewing with two brown bands, one medial and one apical (Figs. 25–33) | 2 |
| | Forewing uniformly clear, without brown bands (Figs. 34–38) | 5 |
| 2(1) | Forewing with area between dark anterior and posterior margins of apical band almost as dark throughout, with basal demarcation of the band straight (Figs. 28, 29, 32) . . . | 3 |
| | Forewing with area between dark anterior and posterior margins of apical band mostly clear except at wing apex, with basal demarcation of apical brown band strongly concave (Figs. 25–27, 30, 31, 33) | 4 |
| 3(2) | Forewing with basal margin of apical brown band perpendicular to long axis of wing (Figs. 28, 32); face with about 10 setae below each torulus (Fig. 3) | |
| | <i>sophoniae</i> Huber, sp. nov. | |
| | Forewing with basal margin of apical brown band oblique, so the dark area is shorter along posterior margin of wing than along anterior margin (Fig. 29); face with about 15 setae below each torulus | <i>indopeninsularis</i> (Mani and Saraswat) |

- 4(3) Forewing with apical brown band distinctly wider along anterior margin at apex than along posterior margin (Figs. 25, 31) *bagicha* (Narayanan, Subba Rao and Kaur)
Forewing with apical brown band at most only slightly wider along anterior margin at apex than along posterior margin and wing apex (Figs. 30, 33) *dei* (Girault)
- 5(1) Propodeum with one pair of setae (Fig. 7) 6
Propodeum with two pairs of setae 7
- 6(5) Female clava without crescent-shaped, transverse sensillum *hishimoni* Taguchi
Female clava with a crescent-shaped, transverse sensillum *tayalumi* Taguchi
- 7(5) Forewing relatively narrow, length/width almost 7.8 (Fig. 34) *elisabethae* (Ferrière)
Forewing relatively broad, length/width at most 6.2 8
- 8(7) Forewing length/width 6.2 (Fig. 35) *kusnezovi* Ogloblin
Forewing length/width about 5.7 (Fig. 36) 9
- 9(8) Propodeum with submedian setae much closer to each other than to sublateral line
. *lepidum* Annecke and Doutt
Propodeum with submedian setae closer to sublateral setae than to each other
. *gracile* Prinsloo

Chaetomyrmar gracile Prinsloo

Chaetomyrmar gracile Prinsloo, 1986: 348 (original description).

Type material.—Holotype ♀ (PPRI), not examined.

Comments.—Prinsloo (1986) noted differences in the structure and proportions of the antennal segments between *C. lepidum* and *C. gracile*. These differences may be more apparent than real because the female antenna of *C. lepidum* is illustrated in dorsal view (Annecke and Doutt 1961) whereas that of *C. gracile* is illustrated in lateral view. The excellent illustrations by Annecke and Doutt (1961) and Prinsloo (1986) of both species show the key feature (number of propodeal setae) used above.

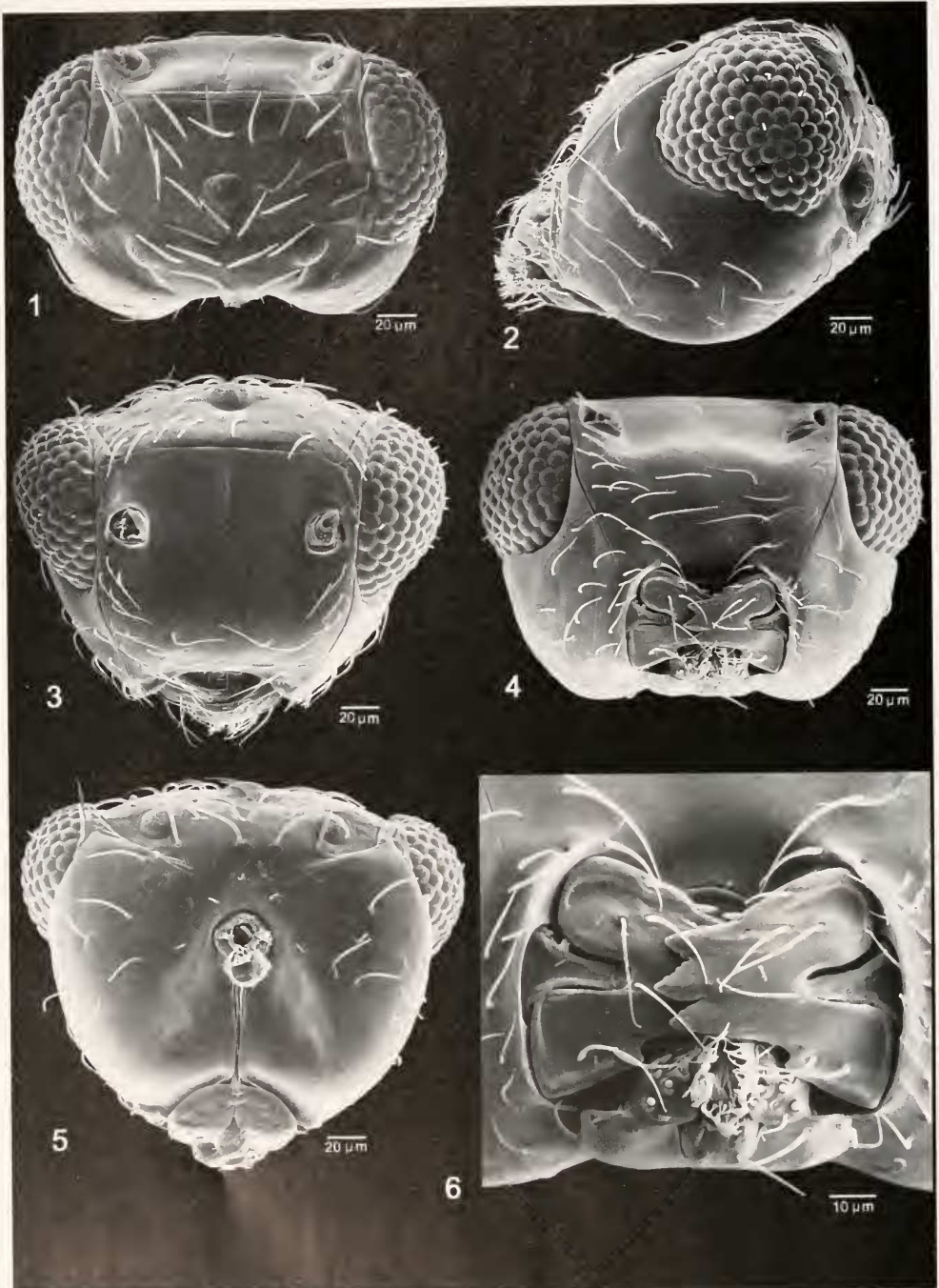
Chaetomyrmar hishimoni Taguchi

Chaetomyrmar hishimoni Taguchi, 1975: 111 (original description); Schauff, 1984: 57 (list); Triapitsyn & Huber, 2000: 613 (key).

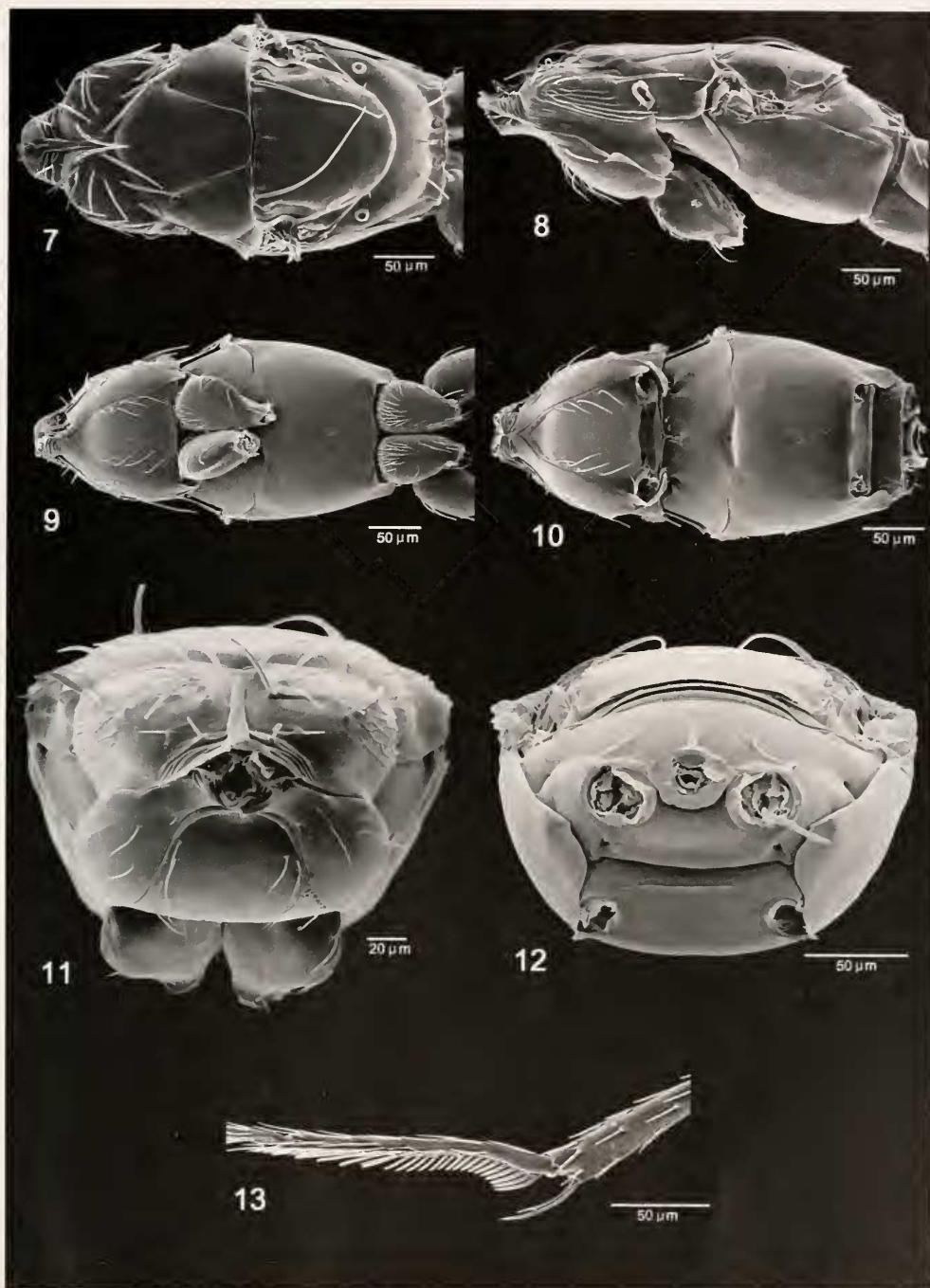
Type material.—The type specimens of this species, reared from *Hishimonus sellatus*, are lost according to Mr. Toshio Muroi, Kyushu University, and Dr. Kenzou Yamagishi, Meijo University (pers. comm.). Dr. Tetsusaburo Tachikawa (in litt. to Mr. Muroi) believes the types have been destroyed.

?Other material.—JAPAN: Fukuoka, ?Sept.1967, K. Yasumatsu, ex. overwintering eggs of *H. sellatus* on mulberry (2♀ ♀, CISC). CHINA: Fujian, Jiangle, 10.x.1991, N.Q. Lin [determined as *C. hishimoni* by Xu Mei] (1♀, CNCI).

Comments.—The two slide-mounted specimens from Fukuoka may represent *C. hishimoni* but differ from the original description as follows. Forewing with two brown bands (Fig. 27), extreme apex of hind wing brown, bases of F2 and F3 narrowly brown (no mention of brown banding in original description), body honey yellow (brown in description), slightly darker than light yellow scape, pedicel and funicle, legs and petiole. Propodeum with 2 and 2 propodeal setae (1 and 1 in description and illustration) but on the laterally mounted specimen only 1 seta in total is visible. Vertex with 11 or 12 setae on each side (13 in description). Clava with 4 apical and 2 medial sensilla (Fig. 41) (also with subapical sensilla in description). The specimen from Jiangle is similar to the Fukuoka specimens, but has only one pair of propodeal setae, positioned as in the original illustration of *C. hishimoni*. It appears to have only 6 sensory ridges on the clava, instead of seven. Taguchi's



Figs. 1-6. *Chaetomyrta sophoniaca*, Hawaiian Is., Oahu, head. 1, Dorsal. 2, Lateral. 3, Anterior. 4, Ventral. 5, Posterior. 6, Mouthparts.



Figs. 7-13. *Chaetomyrta sophoniae*, Hawaiian Is., Oahu. 7-12. Mesosoma. 7, Dorsal. 8, Lateral. 9, 10, Ventral with and without coxae. 11, Anterior. 12, Posterior. 13, Foretibial spur.

Table 1. Measurements (in μ m) of primary types of nominal species of Asian *Chaetomyrmar*, except *C. tayalun* and *C. hishimoni* whose types are lost. Abbreviations used: Co. = Coxa; Fem = femur; FW = forewing; HT = holotype; HW = hind wing; L = length; LTS = longest marginal setae; LT = lectotype; Ovip. = ovipositor; Tib. = tibia; Tr. = trochanter; W = width. Some measurements could not be made because parts were missing or not clearly visible. Measurements of structures positioned obliquely are inaccurate and are indicated by " \approx ".

Nominal species	Type	Head W	Mesosoma		Ovip. L	Ovipositor/ hind tibia	Forewing				
			W	L			L	W	L/W	LMS	Venation L
<i>sophoniae</i>	HT	220	163	124	370	1.10	838	126	6.65	155	211
<i>bagicha</i>	HT	\approx 298	\approx 278	\approx 144	346	0.98	910	155	5.85	183	257
<i>deccana</i>	HT	238	\approx 229	—	281	1.02	730	119	6.11	187	177
<i>indopennsularis</i>	HT	332	—	206	412	0.90	1146	182	6.30	252	225
<i>elisabethae</i>	HT	239	—	150	271	0.64	1181	152	7.78	218	270
<i>kusnezovi</i>	HT	257	211	133	\approx 273	—	1030	180	5.72	210	260

measurement of F6, greater than F5, is clearly an error. F6 should be shorter than F5, as he illustrated. Otherwise, the measurements of the two Fukuoka specimens fall within the limits given by Taguchi.

The reduced thickness of the apical brown band on the forewing (compare Figs. 27, 30, and 33) of the Fukuoka and Jiangle specimens is similar to *C. bagicha* and, particularly, to *C. dei*. In contrast, the complete absence of a propodeal carina in the Fukuoka and Jiangle specimens, exactly as in Taguchi's illustration of *C. hishimoni*, shows that *C. hishimoni* is different from *C. bagicha* and *C. dei*, both of which have propodeal carina. *Chaetomyrmar bagicha* was collected "sweeping luzerne and mulberry". *Chaetomyrmar hishimoni* was reared from *H. sellatus*. The two Fukuoka specimens were reared from *H. sellatus* on mulberry. This might suggest that *C. hishimoni* might be a junior synonym of *C. bag-*

icha, as both species were collected on mulberry, but the propodeal differences suggest that they are indeed different species. A better option, given the loss of the type series, is to designate one of the two Fukuoka specimens as neotype of *C. hishimoni*, based on a similar propodeal structure and assuming that the other differences between the Fukuoka specimens and the original description of *C. hishimoni* are due to variation. Finally, if Taguchi's description is accurate and one assumes no variation then it appears that the two Fukuoka specimens represent a third species reared from *H. sellatus*, different from *C. hishimoni* and *Himopolynema hishimonus* Taguchi (Taguchi 1977). More reared material of *Chaetomyrmar* from *H. sellatus* and other hosts, preferably from mulberry in the type localities of *C. hishimoni* in Japan (Ayabe, Kyoto Pref., Akakura, Niigata Pref. and Seto, Aichi Pref.), is needed to assess variation more thoroughly before

Table 1. Extended.

Hind wing				Foreleg									
L	W	LMS	Vein L	Co.	Tr.	Fem.	Tib.	Tarsus					
								Total	1	2	3	4	
773	20	120	226	91	71	226	304	367	184	70	55	55	
803	18	146	238	98	54	272	273	337	137	87	53	53	
636	19	125	187	77	46	205	197	254	98	66	45	45	
1096	26	185	319	108	72	329	307	401	168	106	76	55	
968	13	172	301	94	60	309	334	296	241	112	71	68	
827	25	208	272	95	\approx 62	\approx 223	296	340	139	77	64	56	

Table 1. Extended.

Nominal species	Middle leg									Hind leg							
	Co.	Tr.	Fem.	Tib.	Total	Tarsus				Co.	Tr.	Fem.	Tib.	Total	Tarsus		
						1	2	3	4						1	2	3
<i>sophoniae</i>	87	70	245	307	366	185	71	52	55	96	71	≈391	337	374	212	64	47
<i>bagicha</i>	91	67	281	340	381	180	90	57	51	125	79	309	373	380	193	81	57
<i>deccana</i>	62	49	201	260	292	128	68	46	46	87	57	229	263	295	139	65	46
<i>indopeninsularis</i>	88	64	318	401	488	240	106	74	65	157	84	394	445	478	256	95	68
<i>elisabethae</i>	89	70	334	450	501	258	101	75	62	168	79	370	428	512	285	94	65
<i>kusnezovi</i>	87	66	≈264	413	362	167	77	63	59	109	83	≈332	427	329	164	70	52

determining the status of *C. hishimoni* and, if necessary designating a neotype from that material.

***Chaetomyrma kusnezovi* Ogloblin**
(Figs. 35, 46)

Chaetomyrma kusnezovi Ogloblin, 1946: 277 (original description); Taguchi, 1975: 113 (comparison with *C. hishimoni*); Schauff, 1984: 57 (mistakenly reported from Europe); Triapitsyn and Huber, 2000: 613 (key); Triapitsyn and Berezovski, 2002: 3 (new record).

Type material.—Holotype ♀ (MLPA), examined. Labelled as follows 1. "*Polyneura Chaetomyrma kusnezovi* ♀ A.O. Typus Nikol'sk Ussurijskij Ussurij Oblast' vi.1926. N.N.K." 2."3920". The year on the type slide is different from that given in the original description, i.e., 1928.

Other material.—RUSSIA. Primorskii krai: Gornotayozhnoye, 21–31.vii.2000, M.V. Michailovskaya (1♀ on point, UCRC). CHINA. Liaoning: Shenyang, 8.vii.1992, N.Q. Lin (1♀, on slide, CNCI).

Comments.—The Russian female was

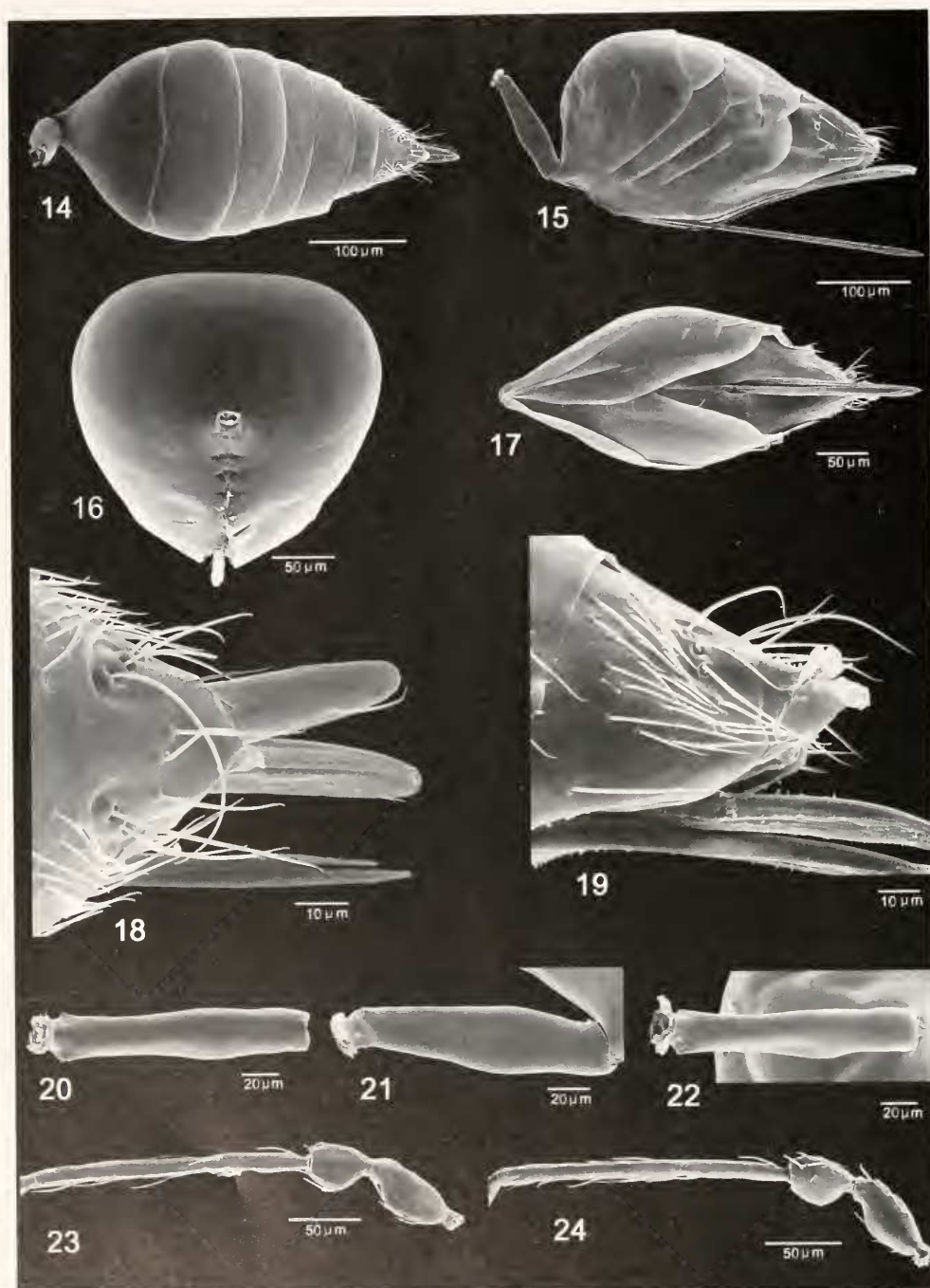
collected in a Malaise trap about 18 km SE of the type locality. The axillar seta is very strong and thick and it agrees perfectly with the holotype (S. Triapitsyn, pers. comm.). The Chinese female, tentatively assigned here to *C. kusnezovi*, is smaller, has narrower wings (FW length/width = 7.3) and lacks the sublateral pair of propodeal setae. The thickness of the axillar setae cannot be determined because they are broken off but the submedian pair of propodeal setae are very closed together and almost touching the posterior margin of the propodeum, as in *C. kusnezovi*.

***Chaetomyrma lepidum* Annecke and Doutt**
(Figs. 36, 51)

Chaetomyrma lepidum Annecke and Doutt, 1961: 54 (original description); Subba Rao, 1970: 665 (new distribution records—Tanzania, South Africa, host—*Leucoptera*); Schauff, 1984: 57 (list); Prinsloo, 1986: 347 (host record); Viggiani, 1989: 146 (male genitalia).

Table 1. Extended.

Scape		Pedicel		Funicle article												Clava	
				1		2		3		4		5		6			
L	W	L	W	L	W	L	W	L	W	L	W	L	W	L	W		
77	31	55	30	80	13	126	13	125	15	84	16	65	18	62	22	156	45
102	32	57	29	79	—	157	—	149	—	107	—	72	—	69	—	160	—
82	29	48	29	58	12	121	13	108	13	80	14	51	17	53	22	131	49
102	39	68	33	90	14	178	15	176	17	138	17	104	20	86	27	176	58
84	—	65	—	93	14	196	14	181	16	172	17	90	17	94	21	188	≈46
142	—	68	—	108	14	144	15	127	15	100	16	72	19	63	26	185	62



Figs. 14–24. *Chaetomyrmar sophoniae*, Hawaiian Is., Oahu. 14–19. Metasoma. 14, Dorsal. 15, Lateral. 16, Anterior. 17, Ventral. 18, 19, Apex of gaster, dorsal and lateral. 20–22, Petiole dorsal, lateral and ventral. 23, 24, Female scape-F2, medial and lateral views.

Type material.—Holotype ♀ (PPRI), not examined. One male paratype (MLPA) was examined.

Comments.—Annecke and Doult excluded 9 specimens from their type series that differed in several minor features from the type series, and, particularly, the presence of 3 pairs of propodeal setae. The number and position of propodeal setae are important features for distinguishing species of *Chaetomyrmar*, but some variation occurs. The specimens may represent a new species.

***Chaetomyrmar bagicha* (Narayanan,
Subba Rao and Kaur)**
(Figs. 25, 26, 39, 40, 48)

Polynema bagicha Narayanan, Subba Rao and Kaur, 1960: 886 (original description); Narayanan and Subba Rao 1961: 667 (additional descriptive features).

Acmopolynema bagicha; Mani, 1989: 1411 (redescription); Subba Rao and Hayat, 1983: 131 (checklist, transfer to *Acmopolynema*); Fidalgo, 1989: 6 (reasons for removing *C. bagicha* from *Acmopolynema*).

Chaetomyrmar bagicha; Hayat, 1992: 85 (transferred from *Polynema* to *Chaetomyrmar*).

Mymarilla deccana Mani and Saraswat, 1973: 109 (original description).

Polynema deccana; Subba Rao, 1976: 89 (transferred to *Polynema*); Subba Rao and Hayat, 1983: 131 (synonymy under *bagicha*).

Type material.—Holotype ♀ (of *bagicha*) (IARI), examined. On slide, labelled as follows: 1. "Mymaridae.8 IARI Entom Div *Polynema bagicha*. col. R.R.K 10/5/57." 2. "Holotype *Poly. bagicha* No. 8." (written in black ink directly on slide). A red circle with "Holotype ♀" written on it has been added to indicate its primary type status. The specimen is uncleared, complete but slightly crushed, under a large coverslip ringed in black (mounting medium therefore probably water soluble). Allotype ♂ (IARI), with similar labelling as holotype but "Delhi, 17/8/57" replaces the collector abbreviation. The original description gives the allotype date as the collection lo-

cality and date for the holotype; this is assumed to be an inadvertent error. Although no locality is given on the holotype slide it is assumed to have been collected at the same place as the allotype, as indicated in the original description. The remaining two females and one male were not examined.

Holotype ♀ (of *deccana*) (USNM), examined. On slide, labelled as follows: 1. "Mani & Saraswat holotype *Mymarilla deccana*" [written in black ink directly on slide]. 2. "School of Entomology St. John's College Agra—2 India". 3. "5-1. Bhorgat Dam: Poona Coll. Mani & party 6.iii.1972". 3. "Holotype". The specimen is uncleared and flattened under one coverslip.

Other material examined.—INDIA: Delhi, 11.v.1985, J. LaSalle (2♀ on cards, 1♀ on slide, and 5♂ on cards, 2♂ on slides, CNCI). SRI LANKA: Central Gannoruwa Wet Zone, 20.vi.1987, A. Wijesekara, crop (1♀, USNM); NE Alawakumbura Madura Oya, 26.vi.1988, A. Wijesekara, on weeds (1♀, USNM).

Diagnosis.—This species is distinguished from *C. dei* by the wider dorsoapical brown part of the apical band on the forewing, and the presence of a longitudinal sensillum on F6 in females. It is distinguished from *C. sophoniae* and *C. indopense* by the brown apical band being distinctly darker anteriorly and posteriorly than medially (Fig. 25), such that the basal margin of the band appears strongly concave (band more uniformly coloured and with almost straight basal margin in *C. sophoniae*).

Female.—Holotype measurements given in Table 1. *Colour.* Bright yellow except brown to dark brown are median part of each trabecula, apex of ovipositor, apical quarter of hind femur, tarsomere 4 of all legs. Forewing with the basal brown band mainly along posterior margin and apical one much wider along anterior than posterior margins and its medial area mainly hyaline, the basal margin of the band thus

strongly concave. Hind wing with apical margin dark brown. Funicle segments uniformly yellowish except F5 and F6 almost white in the female from NE Alawakumbura Madura Oya. *Head*: Width 235 ($n = 1$). Vertex with about 36 short, thick, white setae. Occiput with 3 and 3 thick setae dorsally and about 5 and 5 finer setae ventromedially and laterally. Gena below eye with about 17 moderately coarse setae. Face laterally below each torulus with about 19 and 19 moderately coarse setae. *Antenna*: Length measurements ($n = 1$) are: scape 84; pedicel 54, F1–F6 72, 141, 131, 98, 62, 62, clava 150. Clava and F6 with 7 and 1 longitudinal sensilla, respectively (Fig. 39). *Mesosoma*: Prothorax with about 12 and 12 thick, blunt, white setae mainly in posterior half. Mesoscutum between notauli with 1 and 1 short, very fine setae midway between anterior and posterior margins and lateral panels of mesoscutum with 1 thick long seta sublaterally. Scutellum with 1 and 1 thick setae almost at anterior margin next to (or perhaps on) axilla. Propodeal seta midway between anterior and posterior margins and medial to spiracle, and almost reaching posterior margin. *Wings*: Forewing (Fig. 25) length ($n = 1$) = 827, width = 142, FW length/width = 5.83, LMS = 190. Hind wing length 753, width 19, LMS = 123. *Metasoma*: Petiole length 137 ($n = 1$). Gt₂₋₇ each with 1 and 1 minute setae midway between median and lateral margin. Gt₈ with spiracle and 3 and 3 moderately long setae behind spiracle. Gt₆ with about 13 setae lateral to cercus. Sternum with about 13 and 13 setae lateral to apex of ovipositor. Ovipositor length 305 ($n = 1$), 0.91 times as long as hind tibia.

Male.—Similar to female except as follows. Body length 829 (range 742–922, $ssd = 67$, $n = 5$). Colour generally darker. Yellow, except brown to dark brown are F3–F11 (progressively darker), median part of each trabecula, vertex, apical third of hind femur, apical tarsomere of all legs, Gt₄ medially, most of Gt₅ and all of Gt₆. Forewing

very slightly narrower: FW length/width = 5.74 (5.67–5.81, $n = 2$). Flagellum length = 923 (883–971, $n = 3$). Length/width of F6 = 3.31 (3.19–3.35, 0.11, $n = 3$). Gt₆ without spiracle and 1 and 1 minute setae. Gt₇ with 6 and 7 setae lateral to cercus and 1 and 1 setae close together on flat median projection between cerci. Gs₇ with 2 and 2 setae lateral to genitalia and 2 and 2 at apex. Another 2 and 2 setae occur medioventrally and laterally on the ventral median projection of sclerite (or perhaps on an extrusion of the crushed genitalia of paratype?). Genitalia with aedeagus bent ventrally at a right angle at about its midpoint. Genital capsule length 55.

Chaetomyrmar dei (Girault), **comb. nov.**
(Figs. 30, 33, 43, 50)

Polynema dei Girault, 1922: 104 (original description); New 1976: 5 (notes on holotype, measurements, illustrations); Dahms 1983: 215 (locality data for holotype).

Type material.—Holotype ♂ (QMBA), examined.

Other material examined.—AUSTRALIA: Northern Territory: 53 km SSW Darwin, 12°52'10.5"S 130°35'04.4"E, 25.viii–1.ix.1998, M. Hoskins, mango patch, Malaise trap (1♀ & 1♂ on slides, CNCI). Queensland: Blackfellow Creek, 3 km N. Edmonton, 17°00'S 145°46'E, 27.iv.1997, C.J. Burwell (1♂ on point, QMBA); Cairns, 1.iv.1991, J.D. Pinto, wooded riparian, sweeping (1♀ & 3♂♂ on points, CNCI). PAPUA NEW GUINEA: Central Province: near Eicogo ≈40 km E. Port Moresby, 28.xii.1985, G. Gordh, rainforest, sweeping (1♂, CNCI).

Comments.—New (1976) illustrated and measured the forewing and antennae based on the male holotype and a female collected by Girault (and labelled "co-type") but not mentioned in the original description. The holotype forewing (Fig. 33) and a forewing and female and male antennae from specimens that likely represent *C. dei* collected near Darwin are illustrated (Figs. 30, 43, 50).

Diagnosis.—Forewing with apical brown area broader anteriorly than posteriorly, and almost divided into two parts at extreme apex of wing where the clear area extends almost to wing apex (Fig. 33). In *C. sophoniae* and *C. bagicha* the apical band, especially along the anterior margin, is wider. The male holotype has a distinctly wider forewing than the female "co-type". This appears to be a secondary sexual difference, as it seems to occur also in other species as well.

Chaetomyzomys indopeninsularis (Mani and Saraswat), *stat. rev.*
(Figs. 29, 44)

Polynema indopeninsularis; Mani and Saraswat, 1973: 119 (original description); Subba Rao and Hayat, 1983: 131 (synonymy under *bagicha*).

Type material.—Holotype ♀ (USNM), examined. On slide, labelled as follows: 1. "School of Entomology St. John's College Agra-2 India". 2. "5-20 Berijam Lake: Kodaikanal Hills Coll. Mani & Party 5.iv.1972". 3. "HOLOTYPE". 4. "Mani & Saraswat" (written on slide). 5. "*Polynema indopeninsularis* HOLOTYPE" (written on slide).

Diagnosis.—This species is removed from synonymy under *C. bagicha* on the basis of the much more extensive dark band at the forewing apex (Fig. 29) and its larger size. An antenna is figured (Fig. 44) and its measurements given in Table 1. Although this species has about the same number of setae on the head as *C. bagicha* (22 setae on vertex, 15 and 15 on lower face, 18 and 18 on malar area) I think it is sufficiently distinct to warrant species distinction.

Chaetomyzomys sophoniae Huber, *sp. nov.*
(Figs. 1–24, 28, 32, 42, 49)

Chaetomyzomys bagicha (Narayanan, Subba Rao, and Kaur); Beardsley and Huber, 2000: 12 (misidentification);

Chaetomyzomys sp. nr. *bagichi* [sic]; Alyokhin et al.

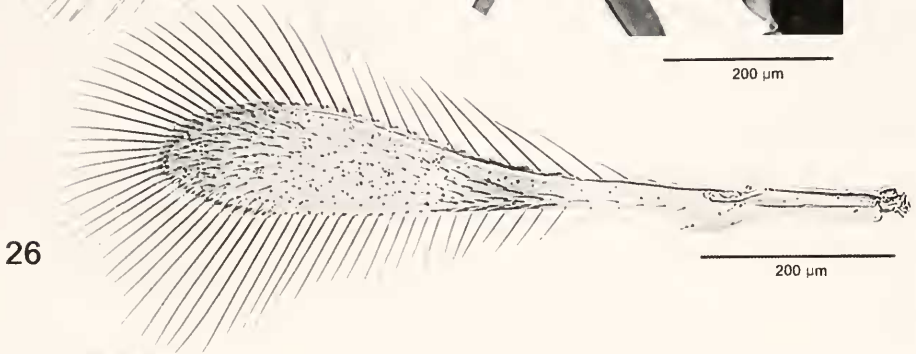
2001: 664 (40% parasitism rate on *S. rufofascia*).

Type material.—Holotype ♀ (CNCI), cleared and slide-mounted in Canada balsam under 4 coverslips and labelled: 1. "*Chaetomyzomys sophoniae* Huber HOLOTYPE ♀ dorsal". 2. "Hawaiian Islands Oahu I., Maunawili Valley, X.1995, P. Follett, on *Cibotium splendens* (tree fern)". PARATYPES. 155 females and 21 males (31 on slides and about 8 used for scanning electron microscopy, remainder on card- or point-mounts). HAWAIIAN ISLANDS. Hawaii I.: Hilo, 25.x.1999, P. Yang (12♀♀, ♂ on points, 1♀ on slide, UCRC); Hilo, Wailuku River State Park, 100m, 25.x.1997, P. Yang (10♀♀ on cards, BPBM); hwy. 11, milepost 44, S. of Hilo, 10.x.1997, P. Yang (1♀ on card, BPBM); Volcanoes National Park, Kipuka Kahalii, 900m, 14.xi.1997, P. Yang (24♀♀, 2♂♂, on cards, BPBM), Kipuka Puaulu, 1200m, 17.x and 26.xi.1997, P. Yang (6♀♀, 2♂♂ on cards, BPBM), Puhimau Crater, 1100m, 12.ix.1997, P. Yang (6♀♀, 2♂♂ on cards, BPBM), Research Station, 1200 m, 24.x.1997, P. Yang (1♀ on card, BPBM), Kealakomo, 3.x.1997, P. Yang (1♀ on card, BPBM). Oahu I.: Maunawili Trail, 21.xi.1995, P. Yang and 20.xii.1995, P. Follett (2♀♀, BPBM), 3.xi.1999, P. Yang (66♀♀ & 1♂ on points, 1♀ on slide, BMNH, CNCI, FAFU, UCRC, USNM). CHINA. Fujian: Fuzhou, vi.2000, N.Q. Lin, ex. *Sophonia pallida* and *S. furcilinea* (24♀♀ and 13♂♂ on cards and slides, CNCI); Fuzhou, Jinshan, 3.x.1999, Y.Q. Chen (1♂ on slide, CNCI) [determined as *C. bagicha* by Xu Mei]. INDIA. Uttar Pradesh: 14 km NE Haridwar, 17.v.1985, J. LaSalle (1♂ on card, CNCI).

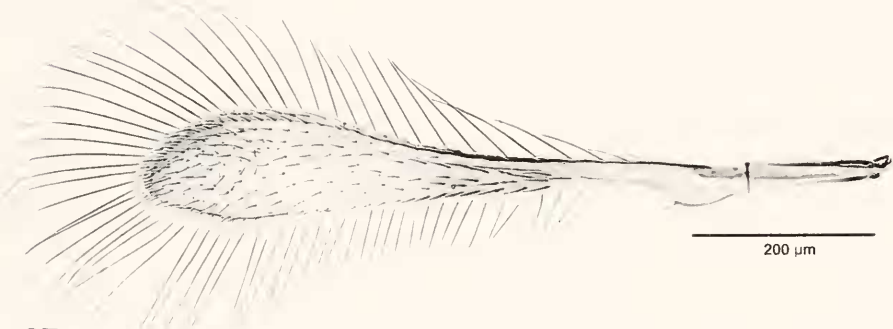
Other material examined.—The specimens dissected and used for scanning electron micrographs, seven broken females from Maunawili and Hilo collected at the same time as the respective paratypes, and 5 teneral specimens still partly in their host eggs from Wailuku River State Park and Volcanoes National Park, Kipuka Kahalii



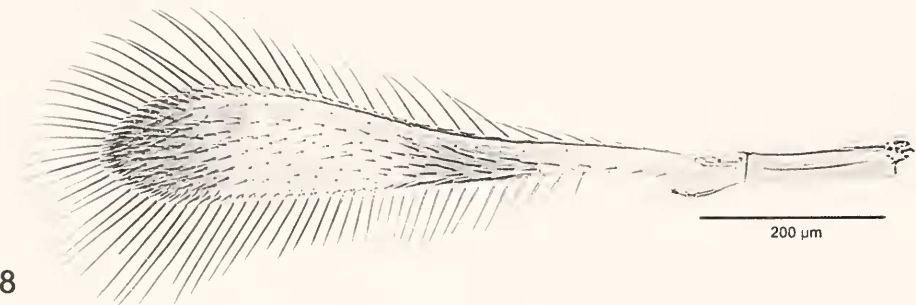
25

200 μ m

26

200 μ m

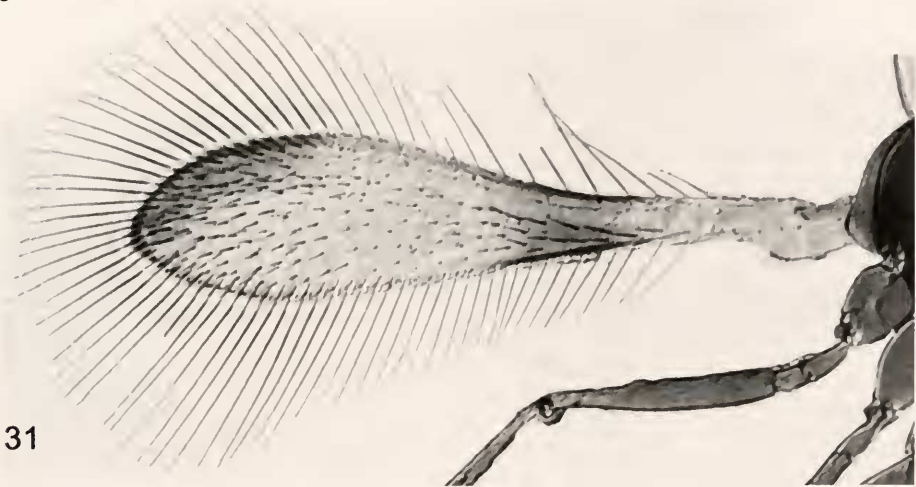
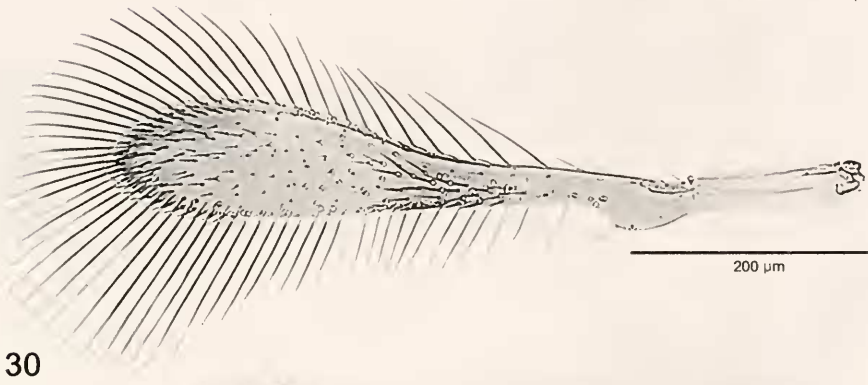
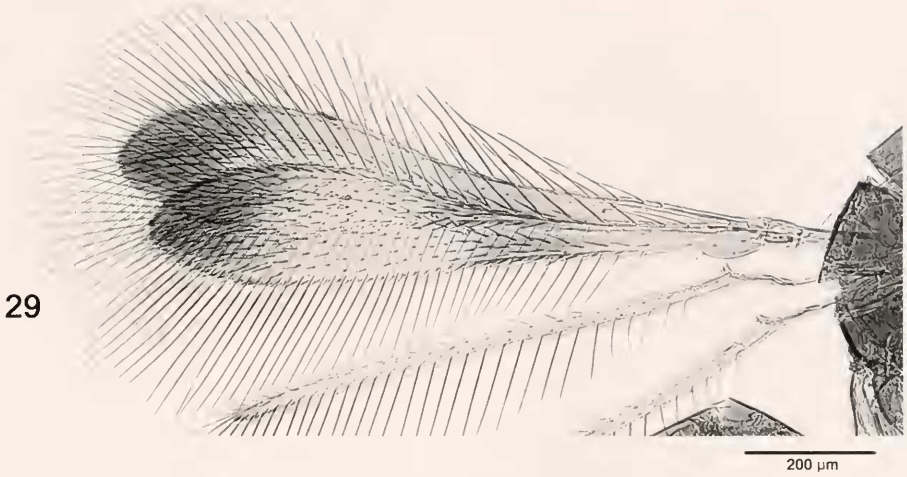
27

200 μ m

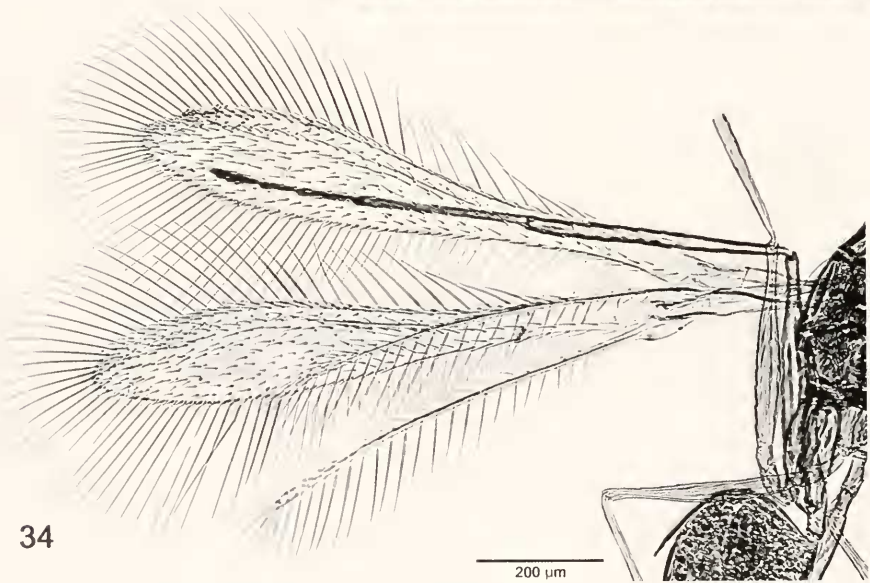
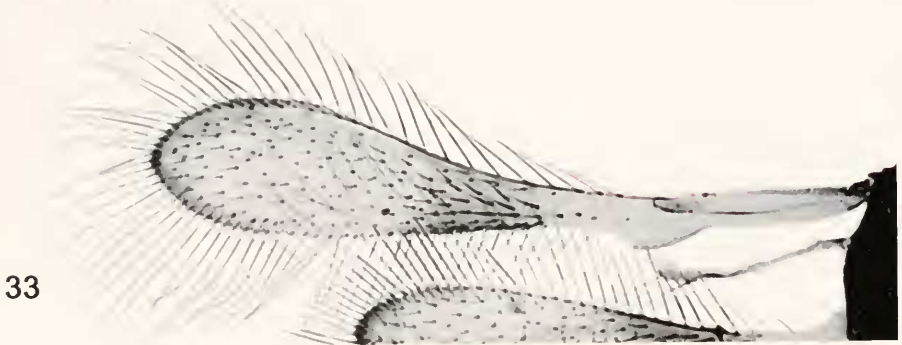
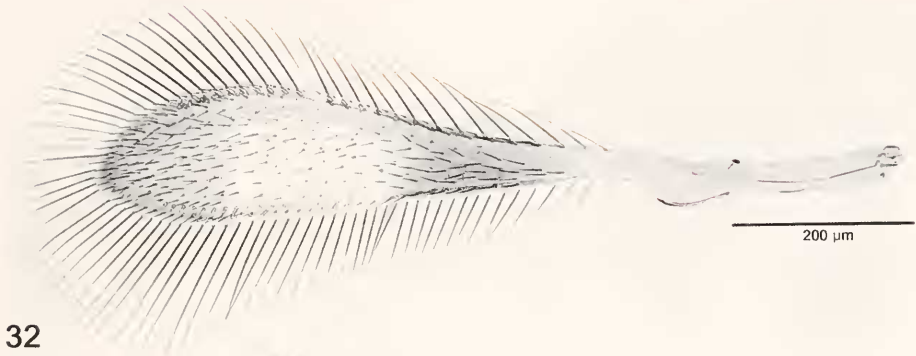
28

200 μ m

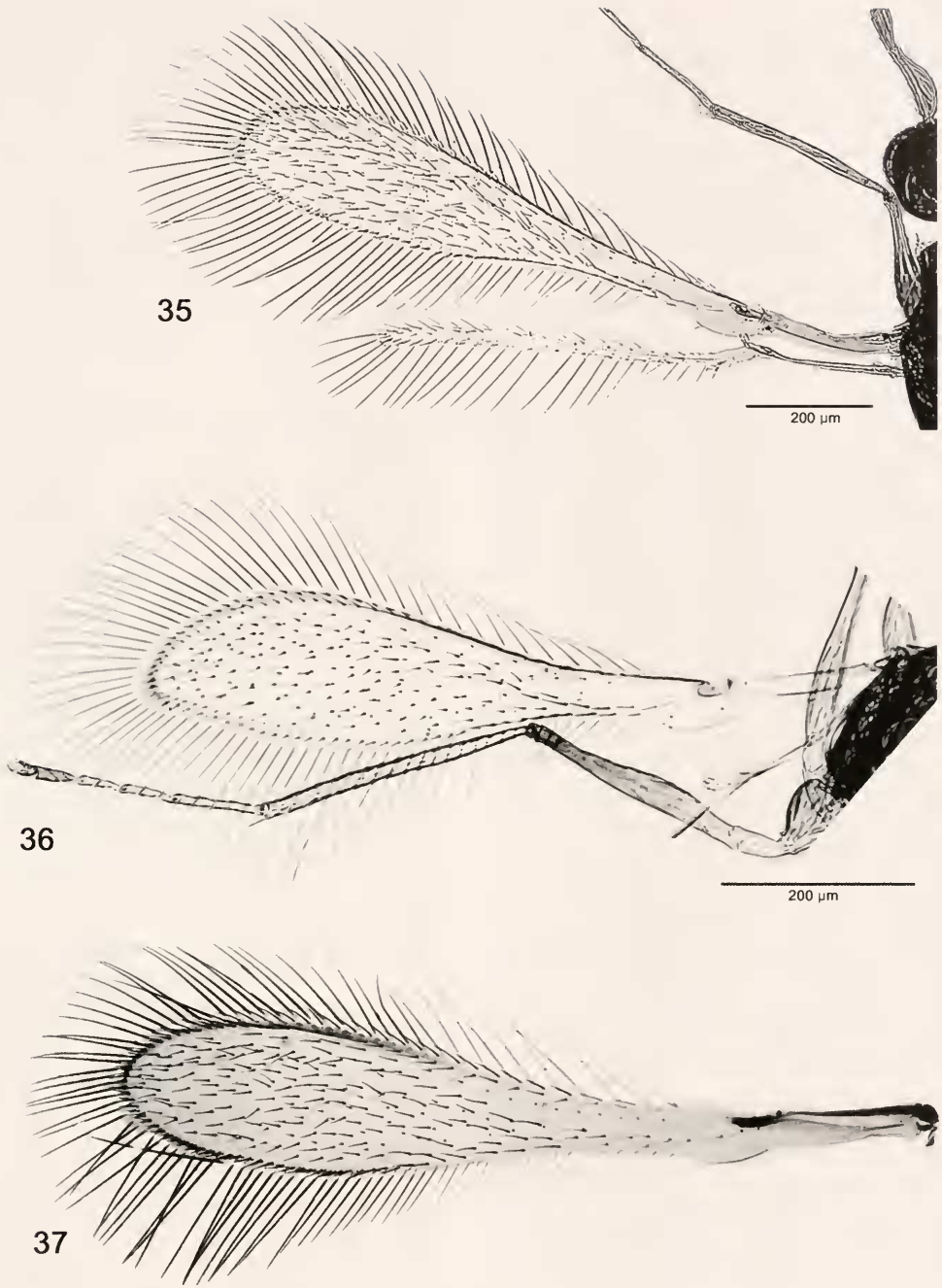
Figs. 25-28. *Chactomymar* spp., forewings. 25, *C. bagicha*, holotype ♀. 26, *C. deccana*, holotype ♀. 27, *C. ?hishimoni*, ex. *Hishimonus sellatus* on mulberry, Japan, Fukuoka. 28, *C. sophoniae*, holotype ♀.



Figs. 29–31. *Chaetomymar* spp., forewings. 29, *C. indopeninsularis*, holotype ♀. 30, *C. dei*, Australia, 53 km SSW Darwin, 25.viii–1.ix.1998, M. Hoskins. 31, *C. bagicha*, allotype ♂.



Figs. 32-34. *Chactomymar* spp., forewings. 32, *C. sophoniae* ♂ Hawaii, Oahu, Maunawili Trail, 20.xii.1995, P. Follett. 33, *C. dei*, holotype ♂. 34, *C. elisabethae*, holotype ♀.



Figs. 35–38. *Chaetomyrmar* and *Acanthomyrmar* spp., forewings. 35, *C. kusnezovi*, holotype ♀. 36, *C. lepidum*, paratype ♀. 37, *Acanthomyrmar nigrum*, paratype ♀.

on 25.x and 14.xi.1997, respectively (BPBM) are not designated as paratypes because of their poor condition.

Diagnosis.—*Chaetomyrmar sophoniae* dif-

fers from *C. bagicha* and *C. dei* by the apical forewing band (Figs. 28, 32). This band is U-shaped, with the medial margin strongly concave in the latter two species but has

the medial margin straight in *C. sophoniae*. *Chaetomymar sophoniae* differs from *C. indopeninsularis* by the number of setae on head. In *C. sophoniae*, there are about 10 and 10 setae on the face below the toruli, about 5 and 5 on the malar space, and about 34 on vertex. In *C. indopeninsularis*, 15 and 15 on face, about 17 and 17 on malar space, and about 40 setae on vertex.

Chaetomymar sophoniae was initially identified as *C. bagicha* (Beardsley and Huber 2000). As more material of both species became available for study and the limits of variation could be better assessed it appeared that two species were involved. Virtually no variation in the size and intensity of the apical brown spot was found in the Hawaiian specimens. However, the apical brown band on the forewing varies more in extent in the Chinese specimens than in the Hawaiian specimens, in some more resembling the band of *C. bagicha*. Little variation was found in the few additional specimens of *C. bagicha* seen, suggesting that wing pattern is fairly reliable for separating the two species. The two species are very close, however, and may eventually prove to be one, variable species, that may also include *C. dei*.

Female.—Body length 897 (666–973, 63, $n = 26$). Colour of body honey yellow, with variable brown suffusion on scutellum posteriorly, propodeum, and G_{3-6} . Trabeculae and clava brown. Legs lighter than body, yellowish-white except for brown apical tarsomere, and sometimes with brownish suffusion on hind femur. Forewing (Fig. 28) with two transverse brown bands, one apically and one medially, with the basal margin of apical band almost straight and the area between dark anterior and posterior margins almost as dark throughout. Hind wing with extreme apex brown. *Head*: Width = 223 (214–229, 5, $n = 7$). Vertex (Fig. 1), back of head (Fig. 5) and gena (Figs. 2, 4) with blunt setae. Face (Fig. 3) with more pointed setae. Mandible (Fig. 6) with 3 teeth. *Antenna*: Length measurements ($n = 9$ or

10): scape 76 (69–86, 6); pedicel 52 (48–55, 2), F1–F6 71 (58–78, 6), 124 (99–135, 11), 124 (104–137, 9), 81 (71–91, 7), 59 (53–65, 4), 61 (53–67), clava 160 (152–173, 7). Clava with seven and F6 with one longitudinal sensilla (Fig. 42). Both medial and lateral surfaces of scape smooth (Figs. 23, 24). *Mesosoma*: With setae as in Figs. 7–12, and smooth, without evident surface sculpture except laterally on pronotum (Fig. 11). Mesoscutum (Fig. 7) length = 134 (122–149, $n = 8$), width = 172 (169–173, $n = 3$). Propodeum (Figs. 7, 12) with median carina extending almost halfway towards dorsellum and with 1 and 1 setae much closer to hind coxal foramen and median carina than to spiracle. *Wings*: Forewing measurements ($n = 10$): length = 831 (750–888, 44), width = 123 (108–133, 9), FW length/width = 6.8 (6.0–7.87, 0.59), LMS = 221 (127–175, 16). Hind wing ($n = 9$) length ($n = 10$) 742 (629–817, 54), width (17 (14–19, 2), LMS = 123 (107–138, 13). *Metasoma*: Gaster smooth (Figs. 14–19), with G_{t_1} the largest tergum. Petiole joined to tergum (Fig. 15) and surrounded by G_{t_1} (Fig. 16). Petiole length = 132 (112–150, 17, $n = 5$), smooth and without ventral longitudinal suture (Figs. 20–22). Ovipositor length = 362 (318–395, 26, $n = 7$), averaging 1.16 times length of hind tibia. Spiracle present on G_{t_6} (Fig. 15). *Legs*: Foretibial spur with fork in apical half and inner tine about half length of outer tine (Fig. 13). Coxae (Fig. 9) setose ventrally.

Male.—Similar to female except as follows. Body length 788 (742–845, 46, $n = 5$). Colour generally darker than in female. Head except vertex and tips of mandibles, yellow; vertex honey colored; tips of mandibles reddish brown; flagellum brown except basal segment slightly lighter, scape and pedicel yellow, propleura yellow, rest of mesosoma brown, slightly lighter (honey coloured) anteriorly; procoxa, metacoxa and petiole almost white, mesocoxa and remainder of all legs very pale yellow except for black apical tarsomere; gaster black apically, honey yellow

basally. Forewing (Fig. 32) wider than that of female; FW length/width ($n = 3$) 5.94 (5.90–5.98). Antenna (Fig. 49) with flagellum length 938 (920–947, 15). Length/width of F6 2.8 (2.69–2.93, 0.12).

Biology.—The known hosts are three *Sophonina* species: *S. rufofascia*, *S. pallida* and *S. furcilinea*. *Chaetomyrmar sophoniae* is a solitary parasitoid and appears to parasitize its hosts regardless of the plant species in which the eggs are laid. Host plants from which parasitized eggs of *S. rufofascia* were collected include *Myrica faya*, *Dodonea viscosa*, *Metrosideros polymorpha*, *Cibotium splendens*, and cultivated guava, *Psidium guajava*.

Etymology.—The specific epithet refers to the host genus from which the mymarid has been reared.

Discussion.—*Chaetomyrmar sophoniae* is very close to *C. bagicha* and *C. dei*. It differs by having a distinctly more extensive brown apex to the forewing and more setae on the vertex in front of the anterior ocellus. If the female described by Girault as *dei* is indeed conspecific with the male type of this species, then the antennal proportions of the female are different from those of *C. sophoniae*.

Chaetomyrmar elisabethae (Ferrière)

(Figs. 34, 45)

Polynema elisabethae Ferrière, 1931: 294 (original description).

Chaetomyrmar elisabethae; Subba Rao and Hayat, 1983: 134 (transfer to *Chaetomyrmar*).

Type material.—Holotype ♀ (BMNH), examined. Slide-mounted but uncleared, in Canada balsam and labelled: 1. "Java, Buitenzorg, vii.1925, R. Menzel. Ex. oeufs de *Euproctus flexuosa*". 2. "Mymaridae: *Polynema elisabethae* sp.n. Ch. Ferrière det. Type." 3. "Holo-type" (white circle with red border).

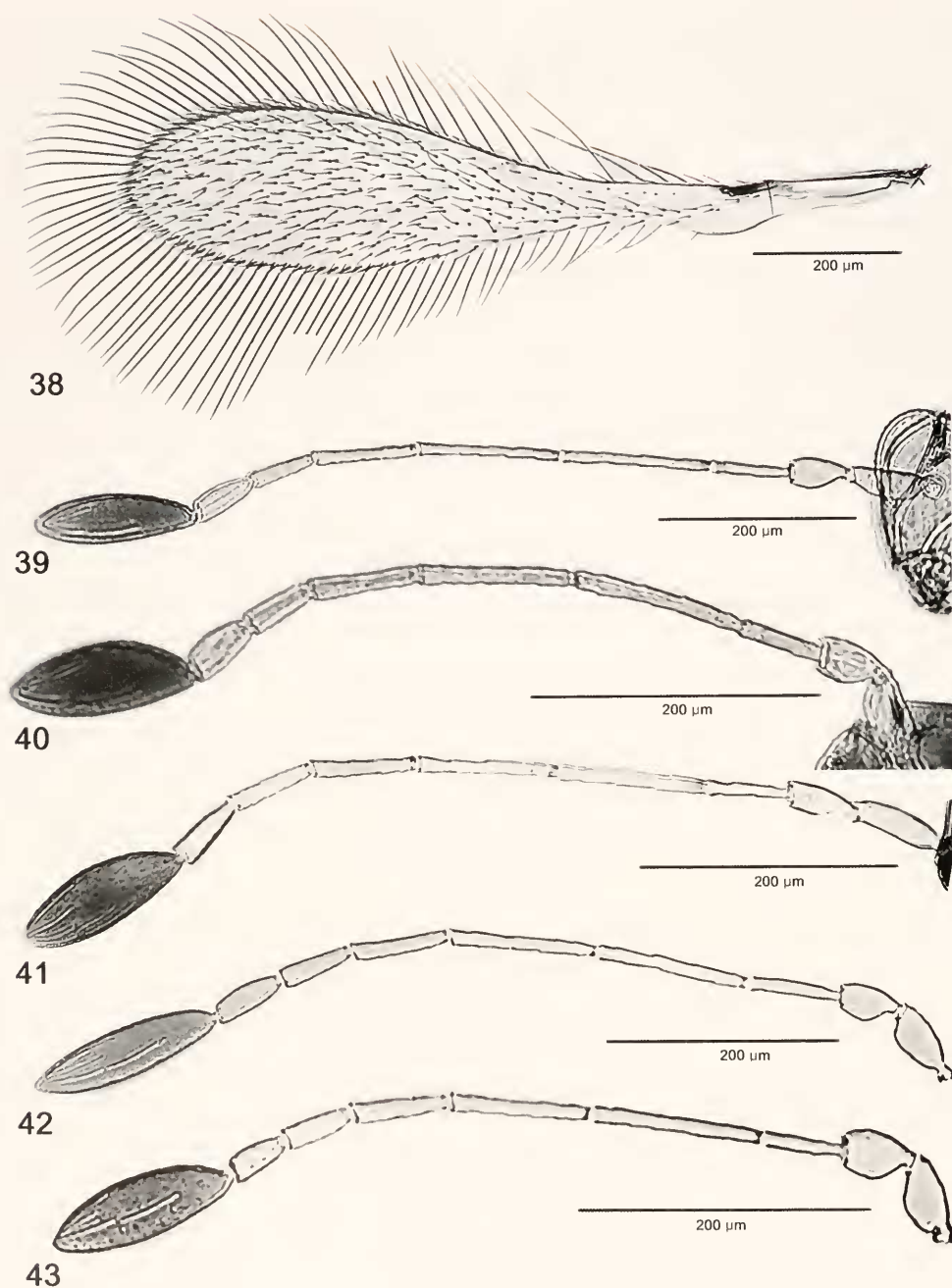
Other material examined.—CHINA. Fujian: Jiangle, 10.x.1991, N.-Q. Lin (1♀, CNCI).

Diagnosis.—Similar to *C. kusnezovi* but

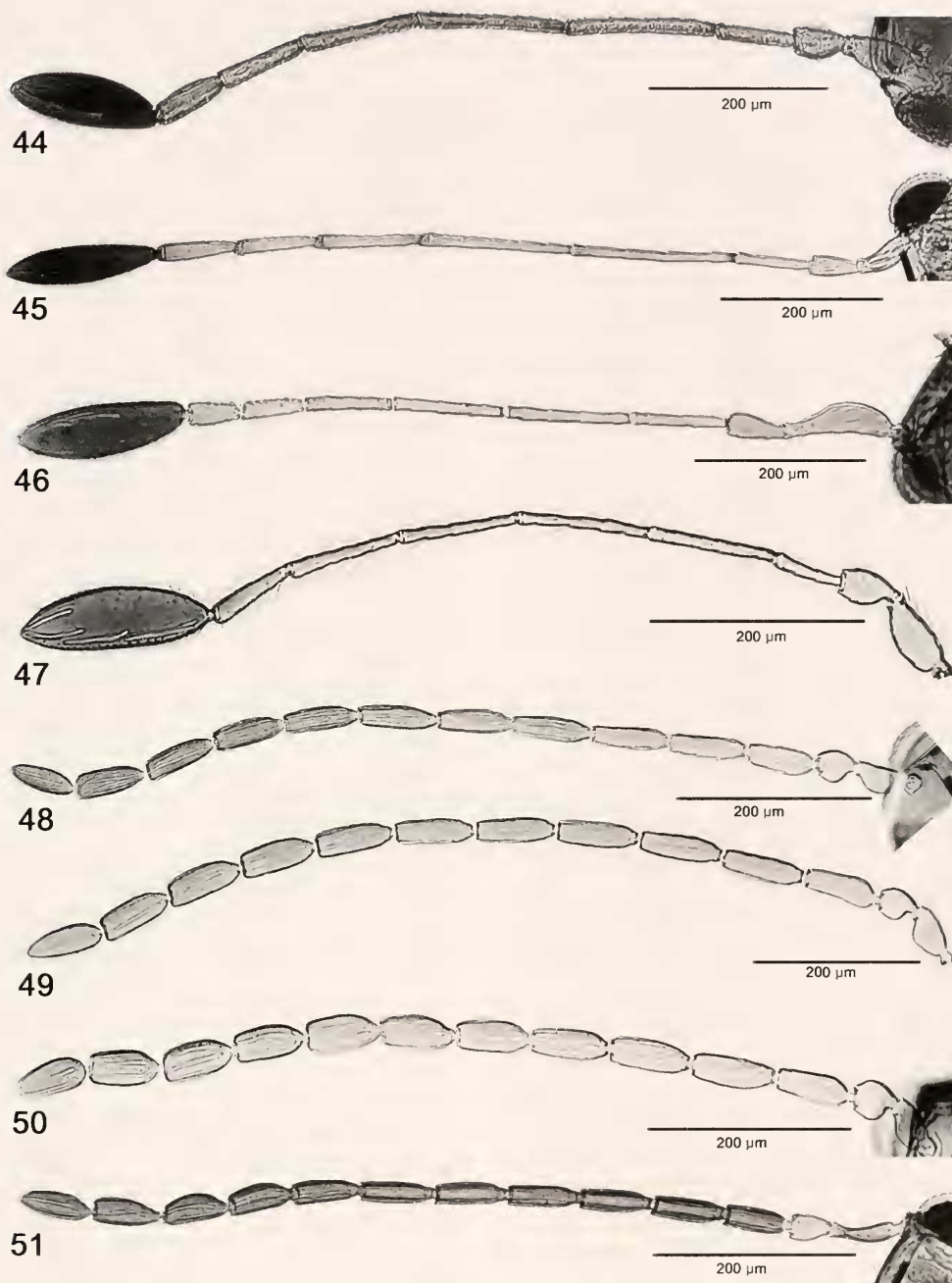
forewing more slender, FW length/width at least 7.7 (5.7 in *kusnezovi*), supraorbital seta 1.3 POL (only about 0.3 POL in *kusnezovi*), base of F2–F6 narrowly brown (base of F2–F3 and perhaps F4 narrowly brown in *kusnezovi*).

Female.—Body length 1105 (holotype). **Head:** Head width 260 ($n = 1$). Face with 11 and 11 setae below toruli. Vertex with 3 and 3 setae in a line behind transverse trabecula, 2 and 2 setae lateral to median ocellus, 2 and 2 setae between median and lateral ocelli, but close to latter, a line of 4 setae behind median ocellus, 2 and 2 setae behind lateral ocelli. Supraorbital seta long (about 1.3 POL), erect, thick and blunt apically, as in *Neomyrmar*. Malar area with 13 setae. **Antenna:** Length measurements: scape length 105, pedicel 66, F1–F6 98, 192, 186, 128, 94, 92, clava 180. **Mesosoma:** Pronotum with 2 and 2 setae along posterior margin, 4 and 4 along anterior margin, and 1 and 1 (the longest setae) medially near the spiracle. Lateral panel of mesonotum with 1 seta in posterolateral corner. Axillar seta reaching apex of scutellum. Notauli at least as wide as propodeal spiracle. Scutellum with placoid sensilla slightly posterior to midway between anterior and posterior margins and apparently without minute lateral setae. Metanotum with 1 and 1 short setae submedially. Propodeum with short median carina extending less than one-quarter distance towards dorsellum and with 2 and 2 propodeal setae, the submedian pair closer to each other than to spiracle and closer to posterior margin of dorsellum than to posterior margin of propodeum. **Wings:** Forewing length 1155, width 149, FW length/width 7.73, LMS 226. Hindwing length 947, width 19, LMS about 151. **Metasoma:** Petiole length 196. Ovipositor length 266.

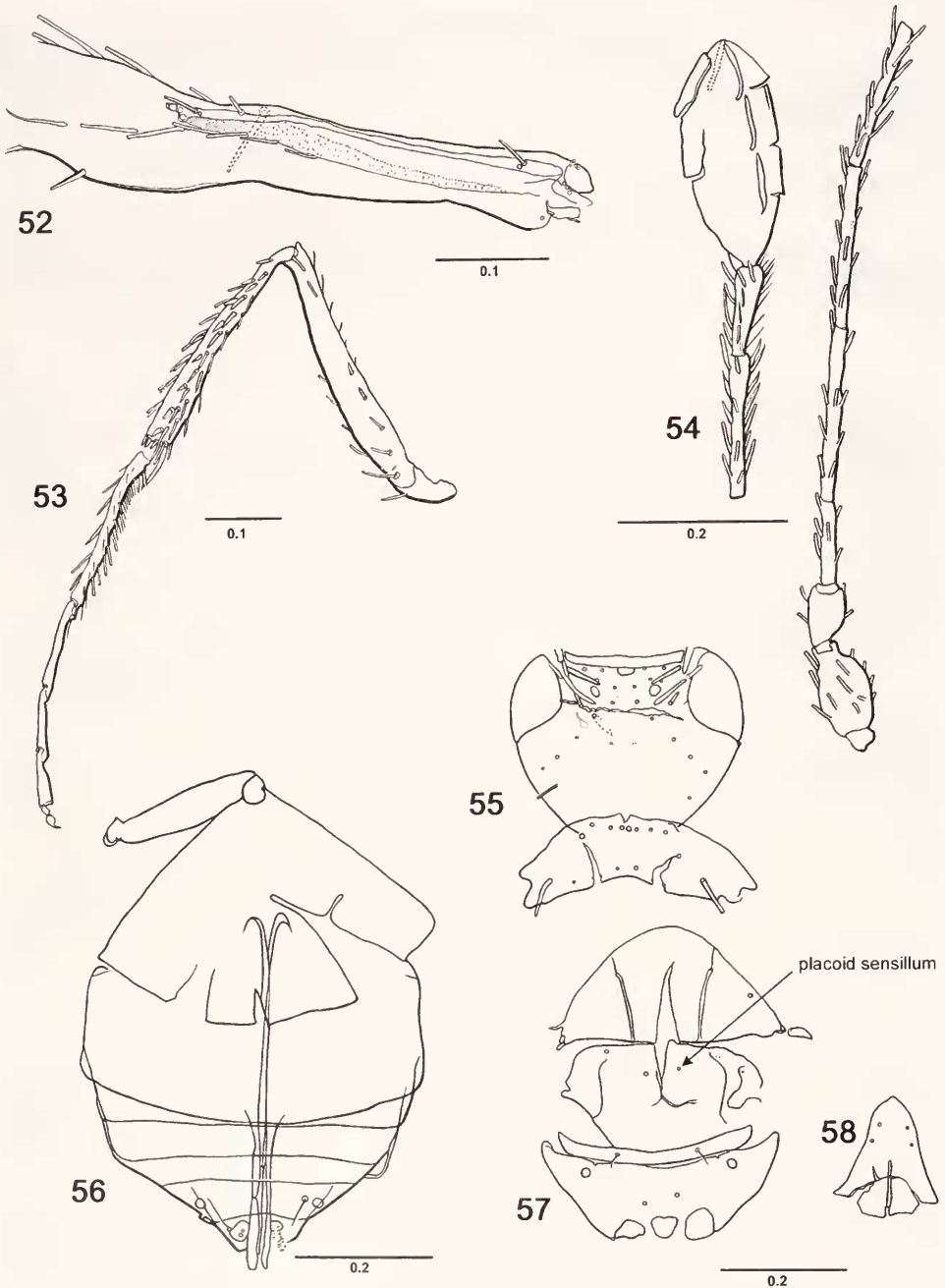
Comments.—The specimen from China extends the species range considerably from the type locality (Buitenzorg, now Bogor) in Indonesia.



Figs. 38–43. *Chaetomyrmar* spp., ♀ antennae. 38, *Polynema* (= *Acanthomyrmar*) sp., Kenya, Mpala Research Centre, Isecheno, 1–9.x.1999, R. Snelling. 39, *C. bagicha*, India, Dehli, 11.v.1985, J. LaSalle. 40, *C. deccana*, holotype ♀. 41, *C. ?hishimoni*, ex. *Hishimonus sellatus* on mulberry, Japan, Fukuoka. 42, *C. sophoniac*, holotype. 43, *C. dei* Australia, 53 km SSW. Darwin, 25.viii–1.ix.1998, M. Hoskins.



Figs. 44–51. *Chaetomyrmex* spp., ♂ antennae. 44, *C. indopeninsularis*, holotype. 45, *C. elisabethae*, holotype. 46, *C. kusnezovi*, holotype. 47, *Chaetomyrmex* (= *Acanthomyrmex*) sp. Kenya, Mpala Research Centre, Isecheno, 1–9.x.1999, R. Snelling. 48, *C. bagicha*, India, Dehli, 11.v.1985, J. LaSalle. 49, *C. sophoniae*, Hawaii, Oahu, Maunawili Trail, 20.xii.1995, P. Follett. 50, *C. dei* Australia, 53 km SSW. Darwin, 22–29.ix.1997, M. Hoskins. 51, *C. lepidum*, paratype.



Figs. 52–58. *Acanthomyrma nigrum*, paratype ♀. 52, Forewing base. 53, Foreleg. 54, Antenna. 55, Head (posterodorsal) and pronotum. 56, Petiole + gaster. 57, Mesosoma dorsal (excluding pronotum). 58, Prosternum.

Polynema nigrum (Subba Rao), comb.
nov.

Acanthomyar nigrum Subba Rao, 1970: 669 (original description); Hayat and Anis, 1999b: 307 (holotype condition).

Type material.—Holotype ♀ (BMNH), examined. Labelled as follows: 1. "*Acanthomyar nigrum* n.g. & n.sp. B.R. Subba Rao det. 1969". 2. "Holo-type" (small round label on red background). 3. "B.M.Type Hym. 5.2089". 4. "C.I.B.C.(E.A.) No. 057". 5. "Uganda Kasengeje: X.63 E.D.L. Matera B.M.1970-1 JJE". The medium in which the ♀ holotype is mounted (?gum chloral) is now almost black so the type is scarcely visible except as an outline. Although it is entire and apparently intact it is useless for study until it can be remounted. The single paratype female, slide mounted in Canada balsam, bears the same locality data as the holotype. Two forewings, one hindwing and two antennae are under one coverslip. The partly crushed head and metasoma are detached from the gaster and several legs, also detached, are under the second coverslip. Hayat and Anis (1999b) corrected some discrepancies in the original description of this species. I redescribe it below based on study of the slide-mounted paratype, on the assumption that it is conspecific with the holotype. The paratype locality is spelled "Kasengeje" and is numbered "C.I.B.C. (E.A.) No. 057."

Diagnosis.—Body dark brown, almost black; wings without dark markings Forewing base (Fig. 52), scape, pedicel and funicle (Fig. 54), and foreleg (Fig. 53) with short stout, blunt setae.

Female.—Body length \approx 1600 μ m (head \approx 170, gaster 679, mesosoma \approx 530, petiole 234). *Head*: Malar sulcus and subantennal sulci absent. Labrum with 2 setae. Frontal sulci extending to mouth margin. Torulus separated from transverse trabecula by at least its own diameter. Mandible with 3 teeth. Gena below eye with 14 and 16 setae. Face smooth, with 9 and 10 setae in two vertical rows laterally and sublater-

ally. Eye margin dorsally with 1 short, strong, blunt seta anteriorly and 1 posteriorly. Vertex without depressions around ocelli, with 4 short, strong, blunt setae in row just behind posterior ocelli and 4 and 4 others between and lateral to ocelli as well as 1 and 1 sensoria just anterior to posterior ocelli. Occiput smooth, without sulci above foramen but apparently with oblique extensions from posterior apex of lateral trabeculae, with about 5 and 5 finer but still apparently blunt setae laterally. *Antenna*: Length measurements: scape 129; pedicel 78, F1–F6 95, 196, 185, 177, 163, 104, clava –. F6 with one longitudinal sensillum (Fig. 54). *Mesosoma*: Pronotum entire, with spiracle at posterolateral angle, on a short stalk, with posterior row of 4 and 3 setae (one seta not formed), anterior row of 4 and 3 setae (one seta not formed) and 1 and 1 setae between these rows. Prosternum bell-shaped, partly longitudinally divided medially, with 2 and 2 setae in anterior half. Mesoscutum normal, with 1 and 0 (not developed) seta on lateral lobe. Notauli ending at slightly enlarged pit before anterior margin, then continuing to margin as fine slit. Scutellum smooth, undivided, without setae or transverse row of foveae, and with placoid sensilla not widely separated. Prepectus triangular. Axillae in line with anterior margin of scutellum, each with 1 distinct medial and 1 small lateral seta. Metanotum not hidden, bandlike, with 1 and 1 submedial and 1 and 1 lateral setae. Propodeum with slight notch on anterior margin just anteromedial to spiracle, smooth, with 1 and 1 submedial setae. *Wings*: Forewing length 1522, width 277, FW length/width 5.5, LMS 272. *Metasoma*: Petiole with 1 and 1 minute setae ventrolaterally and apparently with ventral longitudinal groove. Gaster with spiracle on Gt_6 . Cerci with 4 setae. Ovipositor not exerted. Relative lengths of Gt_1 – Gt_6 : 56.5:35.5:22.1:7.1:6.4:6.7.

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